



ECONOMIC ANALYSIS OF MEAT PROCESSING OPTIONS ON KANGAROO ISLAND

**A Report to Primary Industries and
Regions SA and Livestock SA**

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Prepared by

BDO EconSearch

Level 7, BDO Centre, 420 King William Street
Adelaide SA 5000

Tel: +61 (8) 7324 6190

<https://www.bdo.com.au/en-au/econsearch>

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ABBREVIATIONS

AGKI	Agriculture Kangaroo Island
BCR	benefit cost ratio
IRR	internal rate of return
KI	Kangaroo Island
NPV	net present value
PIRSA	Primary Industries and Regions SA
SWOT	strengths, weaknesses, opportunities and threats

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EXECUTIVE SUMMARY

Introduction

Kangaroo Island is well recognised for its premium quality produce. Many KI producers are exploring ways to attract new market opportunities by building upon the region's known quality and authenticity. Some KI farmers have expressed interest in on-farm or artisan meat processing, recognising potential market opportunities, both locally and nationally.

There are no current dedicated livestock processing facilities on KI, and the majority of livestock is transported off the Island, for processing elsewhere. KI has limited accredited facilities to process and handle raw meats e.g. retail butcher, and cold storage and distribution facilities.

In July 2018, PIRSA attended an Agriculture Kangaroo Island (Ag KI) meeting and outlined the national food safety arrangements for meat processing, how they apply in South Australia, and options for supporting artisan meat processing on KI. In November 2018, PIRSA released a discussion paper *Artisan On-farm Meat Processing on Kangaroo Island*, and invited members of the KI community and other interested parties to make submissions to the Minister for Primary Industries and Regional Development in relation to the regulations and options for supporting artisan on-farm meat processing on KI.

The options discussed in the paper were:

1. Establish a facility for primary meat processing (single or multi-species) or further processing and/or value add
2. Establish a small shared facility for primary meat processing or further processing and/or value add
3. Establish a mobile processing facility, which travels to livestock
4. Utilise existing accredited facilities - e.g. local butcher for further processing and/or value adding.

Sixteen submissions were received.

In late March 2019, PIRSA and Livestock SA engaged BDO EconSearch to conduct an economic assessment to evaluate options for meat processing on Kangaroo Island.

Approach

A desktop review of the Discussion Paper and 16 submissions received by PIRSA in response, regulations and food safety standards relating to meat processing and handling and previous relevant studies was undertaken. Consultation was undertaken with respondents to the Discussion Paper, retail outlets (KI butcher, supermarkets), restaurants and KI Council. A small survey of hospitality venues and supermarkets on the Island was undertaken to gauge potential demand. A discounted cash flow analysis was undertaken to analyse the return on investment of the meat processing facility on KI option.

Meat supply

In terms of red meat stock numbers, sheep dominate the stock numbers on Kangaroo Island (KI). In 2018, approximately 316,000 sheep moved off the island, of which approximately 75 per cent went direct to slaughter and the remainder went to saleyards or to other properties. KI has a relatively short prime lamb season, with the majority of prime lambs marketed during the months of October to December.

The cattle herd on the Island is around 19,500 head, of which approximately 11,000 are breeding cows and heifers. In 2018, nearly 11,000 cattle moved off the Island, of which just over 50 per cent went to a saleyard and the rest either went to another property or direct to slaughter.

The pig herd was estimated to be approximately 800 in 2015/16, of which 150 head were breeding sows. In 2018, 450 pigs left the Island.

There are no meat chicken producers on KI.

Meat Processing and Tracing

There are no dedicated livestock processing facilities on KI and the majority of livestock is transported off the Island for processing elsewhere. Some farmers do their own home kills for their own consumption and there are a couple of former KI Meatworks personnel who provide a home kill service for farmers' own consumption on-farm.

Producers with branded products or wanting to provide a 'paddock to plate' option in their restaurants use custom kill and custom process services. There are four facilities that offer custom kill facilities for red meat within the Adelaide Hills area and at Murray Bridge. The only custom kill facilities for poultry is a single facility near Kapunda. Producers using custom kill facilities on the mainland have experienced difficulties getting timely access for processing their stock and have concerns about the risk of 'getting the wrong product back' through limited control of the supply chain when processing branded product off-island.

The KI Industry and Brand Alliance has established 'place of origin' trust marks. Businesses using the trust marks on their packaging or in marketing must certify that their products meet the brand criteria. For meat products that are processed off-island, this means having a proven chain of custody and handling, certified by the processor. This is an important component of establishing a 'place of origin' brand with strong integrity. However, Kangaroo Island Industry and Brand Alliance have indicated that achieving the chain of custody requirements for use of the trust mark by meat producers has proved difficult. A wide variety of other KI food products is available with these trust marks, indicating the increasing value and recognition of the KI Brand. KI Industry and Brand Alliance see that meat processing on the Island will make it easy for producers to trace their product and encourage them to develop and maintain branded meat products to meet unmet demand from the hospitality sector for assured KI meat products.

Demand for KI Meat Products on KI

A small survey of 28 hospitality venues and supermarkets on the Island was undertaken to gauge potential demand. There are about 65 food and beverage businesses on KI. It should be noted that this was a limited survey and is likely to present the views/expectations of hospitality and catering businesses most keen to support of meat processing on the Island.

Of the sixteen responses received, all were keen to source and use/stock KI meat products. They stated that KI is being marketed as a food destination and that KI branded meat products are an expected part of that offering. Four businesses currently source KI meat products. Two businesses are confident of the traceability of their product and two businesses are not so confident. Seven businesses indicated that they were prepared to pay a premium for a KI produced and processed meat product. Nine hospitality businesses gave their current demand for meat products. Over a year, the demand for these nine businesses was estimated to be approximately 8.4 tonnes beef, 7.2 tonnes lamb, 6.8 tonnes chicken and 5.3 tonnes pork/bacon.

A common message from respondents was a frustration at how difficult it was to source local meat products and that they were seeking product of a consistent quality that is supplied reliably all year round. They saw that a local abattoir on the Island would simplify the supply chain and make it easier for producers to provide what they are after. Several respondents identified that there would be an additional benefit of an on-island kill facility of better quality and better tasting meat. Meat transported off KI to be processed is often affected by adrenalin from the stress of the sea crossing, which negatively affects the meat taste.

In addition to the tourism sector, there is demand from residents on the Island for meat products. Current demand is estimated at approximately 110 tonnes pork, 220 tonnes poultry, 125 tonnes beef and 40 tonnes lamb. If, say the premium meat product component of this demand is 5 per cent of total demand, then the premium meat product demand on KI could be 5.5 tonnes pork, 11.0 tonnes poultry, 6.0 tonnes beef and 2.0 tonnes of lamb meat, which could potentially be met by locally produced and processed meat.

Analysis of Meat Processing Options

Four meat processing options were identified in the PIRSA Discussion Paper. Two options involved a establishing a small, fixed facility/abattoir on the island, the difference being in the ownership arrangements. These options have been analysed as one, without specific consideration of who owns the assets. In light of consultation undertaken, the analysis of the other two options was less detailed and descriptive rather than quantitative.

Analysis of Small, Fixed Facility/Abattoir on KI (options 1 & 2)

Feedback from the Government consultation on options for artisan meat processing on KI were supportive of establishing a small meat processing facility on KI.

A financial analysis of two scenarios, representing the likely lower and upper range of the throughput of such a facility was undertaken, with information on the investment costs and likely revenues and operating costs of such a facility provided by Australian Micro Abattoirs. It should be noted that this is a high level, pre-feasibility analysis and the scenarios are indicative only. Likely throughput would need to be further defined within a feasibility study that included a marketing and branding study. The results of the analysis (Table ES-1) indicate that for both scenarios (i.e. a small and a medium sized contract kill facility with a butchery) a good return on investment could be achieved.

Table ES-1 Results of the discounted cashflow analysis, Scenario 1 and Scenario 2

	Scenario 1	Scenario 2
Capital Costs (\$m)	1.58	3.70
Throughput (head/year)		
Lambs	10,000	25,000
Pigs	500	2,500
Cattle	200	1,000
NPV (\$m)	1.92	4.64
BCR	1.4	1.2
IRR	24%	27%
Payback period (years)	4	4

Source: BDO EconSearch analysis.

However, it should be noted that these results are indicative only and are based on two key assumptions. The first key assumption is that the throughput will be achieved, i.e. that there will be sufficient marketing and coordination for these levels of demand to be maintained. This may be a particular challenge for Scenario 2 with higher volumes, as it is likely that producers will need to combine forces to develop a successful, single KI brand that is marketed to interstate customers. The second key assumption is that the throughput is constant throughout the year, with the facility operating for 42 weeks of the year¹. The demand could well be more seasonal.

Sensitivity analysis of the throughput assumptions was undertaken. In terms of throughput, the break-even point for the smaller facility is reached at 71 per cent² of modelled values and at 80 per cent³ of modelled values for the larger facility.

Furthermore, the cost to the producer seeking the services of custom kill and processing will also need to be price competitive with the alternative services available on the mainland. A comparative cost analysis was undertaken to investigate this. The results of the comparative cost analysis indicate that the KI meat processing facility, based on the price assumptions used in this study, could be price competitive with mainland facilities.

A number of benefits were highlighted, including:

- An enabler for value-adding, branding and marketing opportunities.
- Local employment opportunities. Based on the scenarios modelled, the employment could range from 5 full-time equivalents (4 meat processors and 1 administrative person) to 15 fte (10 meat processors, 3 butchers and 2 administration/management persons).
- Improved meat quality.
- The convenience of local meat supply to residents and tourists, i.e. improved access to meat processing services and easier traceability, which would also enable ‘paddock to plate’ initiatives.
- Fewer animals on the KI ferry. Animal transport can upset tourists and be quite messy.

The KI Council are supportive of local processing of meat on KI. They do not see any significant impediments to locating a facility either on farmland or in the designated industrial area near Kingscote, however they do see that the industrial area has a number of advantages including being centrally located and having access to transport routes, mains power, water and sewerage and waste collection.

In conclusion, initial analysis indicates that a small, permanently located meat processing facility on KI may be viable, and has significant community support. There does not appear to be any significant technical or regulatory barriers to this option. For any company/group seeking to establish a meat processing facility on KI, it is strongly recommended that they undertake detailed market analysis and feasibility study to determine business viability.

¹ That is, the equivalent of 42 weeks operating 5 days/week. The abattoir could operate for more weeks of the year with some of those weeks open for less than 5 days per week.

² 7,100 lambs, 355 pigs and 142 cattle.

³ 20,000 lambs, 2,000 pigs and 800 cattle.

Analysis of Mobile Abattoir operating on KI (Option 3)

Consultation with industry and government experts would indicate that a mobile processing facility is unlikely to be a financially viable option for artisan meat processing on the Island. Furthermore, there was no particular support for a mobile processing unit.

Analysis of Use of Existing Accredited Facilities (Option 4)

This is the business-as-usual option. It does not address the main bottleneck for producers seeking to market their own products, namely accessing custom kill facilities. It would still require these producers to send animals off the island, and therefore would not address the majority of the issues raised. The difficulty of procuring traceable carcasses is a significant barrier to developing on-island value-add processing. Ongoing rationalisation of meat processing on the mainland is removing feasible options for paddock to plate/branded products. This is resulting in a reduced diversity of livestock enterprises on KI, as evidenced by the closure of the main producer of branded free-range pork on the Island and the closure of the only commercial producer of meat geese recently. On the plus side, there is an opportunity to work strategically with Fleurieu producers to develop a 'whole of region' solution for artisan meat processing.

1. INTRODUCTION

Kangaroo Island is well recognised for its premium quality produce. Many KI producers are exploring ways to attract new market opportunities by building upon the region's known quality and authenticity. Some KI farmers have expressed interest in on-farm or artisan meat processing, recognising potential market opportunities, both locally and nationally.

There are no current dedicated livestock processing facilities on KI, and the majority of livestock is transported off the Island, for processing elsewhere. KI has limited accredited facilities to process and handle raw meats e.g. retail butcher, and cold storage and distribution facilities.

Mainland South Australia has a mixture of large abattoirs catering for the national and export markets, smaller boutique processing establishments catering for customised requirements, and a number of smallgoods manufacturers. On-farm or artisan producers work through an accredited abattoir or establish equivalent measures that meet the national standards for meat processing.

In July 2018, PIRSA attended an Agriculture Kangaroo Island (Ag KI) meeting and outlined the national arrangements for meat processing, how they apply in South Australia, and options for supporting artisan meat processing on KI. In November 2018, PIRSA released a discussion paper *Artisan On-farm Meat Processing on Kangaroo Island*, and invited members of the KI community and other interested parties to make submissions to the Minister for Primary Industries and Regional Development in relation to the regulations and options for supporting artisan on-farm meat processing on KI.

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Sixteen submissions were received.

In late March 2019, PIRSA and Livestock SA engaged BDO EconSearch to conduct an economic assessment to evaluate options for meat processing on Kangaroo Island.

2. APPROACH

The approach taken in the study is described in the following tasks.

1. Review the Discussion Paper (“Artisan on-farm meat processing on Kangaroo Island”) and the 16 submissions received by PIRSA from individuals and organisations in response to the Discussion Paper. Review other documents regarding regulation and infrastructure for primary processing, further processing and value adding, e.g. Legislation and Standards in South Australia Fact Sheet.
2. Compile a list of organisations and individuals for consultation - check list with PIRSA to ensure no gaps. The list included respondents to the Discussion Paper, retail outlets (KI butcher, supermarkets), restaurants (including Southern Ocean Lodge), KI Council, and others advised by PIRSA and as arose through the consultation process itself. Prepare/customise questions to assist feasibility assessment, i.e. to help inform the following:
 - a. clarifications from written submissions
 - b. background to previously failed facilities
 - c. current distribution of meat and meat products on KI (major outlets) and the existing source of product
 - d. outlook for livestock production on KI
 - e. current and future demand for KI produced meat and meat products
 - f. construction and operating costs of alternative meat processing facilities on KI
3. Undertake consultation with a number of current/potential exporters. Specifically, it involved:
 - a. Face-to-face interviews on KI
 - b. Face-to-face interviews off Island
 - c. Other interviews (otherwise phone/email) as arranged
 - d. Collating responses and compiling data.
4. Prepare model and undertake high-level analysis to demonstrate potential feasibility (or otherwise) of identified options for a meat processing facility on KI.
5. Considering the information collected and results produced from Tasks 1-4, prepare a short report detailing the feasibility of an artisan meat processing facility on KI.

3. THE CURRENT SITUATION OF KI MEAT SUPPLY, PROCESSING AND DEMAND

3.1. Meat Supply

In terms of red meat stock numbers, sheep dominate the stock numbers on Kangaroo Island (KI). Table 3-1 provides estimates of the sheep, beef and pig numbers on the Island for the last three years.

Table 3-1 Stock numbers on Kangaroo Island, 2015/16 - 2017/18

	2015-16	2016-17	2017-18
Lambs under 1 year	158,554	156,773	183,542
Breeding ewes - merino	178,912	194,858	166,099
Breeding ewes - non-merino	139,888	117,782	141,104
All other sheep	119,841	129,476	108,809
<i>Total sheep</i>	<i>597,194</i>	<i>598,889</i>	<i>599,553</i>
<i>Lambs marked to ewes mated (%)</i>	<i>98%</i>	<i>103%</i>	<i>107%</i>
Meat calves under 1 year	5,668	5,330	7,385
Meat cows and heifers	9,493	8,962	10,955
All other meat cattle	2,007	1,097	1,292
<i>Total meat cattle</i>	<i>17,167</i>	<i>15,389</i>	<i>19,632</i>
Breeding sows	150	np	182
All other pigs	661	np	np
<i>Total pigs</i>	<i>811</i>	<i>np</i>	<i>np</i>

np estimates not provided.

Source: ABS (2017, 2018 and 2019), Agricultural Commodities, Catalogue no. 7121.0

The size of the Kangaroo Island sheep flock is estimated to be around 600,000 head. An estimated 310,000 of these animals are breeding ewes, producing a similar number of lambs each year (Table 3-1). In 2018, approximately 316,000 sheep moved off the island, of which approximately 75 per cent went direct to slaughter and the remainder went to saleyards or to other properties (D. Rendell, PIRSA, pers. comm.).

KI has a relatively short prime lamb season, with the majority of prime lambs marketed during the months of October to December⁴. This characteristic arises because of the difference between KI and the mainland regarding the proportion of grazing to cropping land. For the same number of lambs, farms on the mainland have more cropping land to pasture and therefore can carry over for longer on stubbles (Hartley Consulting 2016).

The cattle herd on the Island is around 19,500 head, of which approximately 11,000 are breeding cows and heifers. In 2018, nearly 11,000 cattle moved off the Island, of which just over 50 per cent went to a saleyard and the rest either went to another property or direct to slaughter (D. Rendell, PIRSA, pers. comm.).

⁴ Rick Morris, Chairperson Agriculture Kangaroo Island, in submission to the Minister regarding meat processing on Kangaroo Island, 29 November 2018.

The pig herd on Kangaroo Island is a little more difficult to determine, but was estimated to be approximately 800 in 2015/16, of which 150 head were breeding sows. In 2018, 450 pigs left the Island (D. Rendell, PIRSA, pers. comm.).

There are no meat chicken producers on KI.

Southern Ocean Lodge contracts a producer on KI to produce partridge and pheasant for use in their restaurant. Southern Ocean Lodge is a luxury accommodation facility on Kangaroo Island that uses premium food products aiming wherever possible to source locally with 'paddock to plate' traceability.

There was a commercial goose producer on KI until March 2018. Prior to closure, he was supplying whole goose to Southern Ocean Lodge and the Sydney market. He cited difficulties getting the appropriate meat handling approvals from the Department of Health for value adding and having to send his geese to Kapunda for processing as reasons for closing down his enterprise (Gorton 2018).

3.2. Meat Processing and Tracing

There are no dedicated livestock processing facilities on KI and the majority of livestock is transported off the Island for processing elsewhere. Some farmers do home kills for their own consumption and there are a couple of former KI Meatworks personnel who provide a home kill service for farmers' own consumption on-farm.

The majority of KI lamb is processed through Thomas Foods International as undifferentiated, uniform priced product (Hartley Consulting 2016). Processing currently occurs at Lobethal. It is expected that beef from KI is also processed there. Some lamb, estimated at 12,000 head in 2016, is processed by JBS Australia at their Bordertown facility (Hartley Consulting 2016).

Producers with branded products or wanting to provide a 'paddock to plate' option in their restaurants use custom kill and custom process services.

For KI producers seeking custom kill services, options include:

- Strath Pastoral, Strathalbyn (sheep, cattle and pigs)
- Max Noske and Son Country Meats, Hahndorf (sheep, cattle)
- Two Brothers Abattoir, Lobethal (sheep, cattle)
- D & D Bratkovic Meat Processing Plant, Murray Bridge (pigs).

It is understood that the main producer of branded free-range pork on the Island, which would have used custom kill facilities on the mainland, has ceased production and KI pork products are no longer available (Kangaroo Island Industry and Brand Alliance submission to discussion paper).

SouthRock Lamb, which has provided a branded KI lamb product for 12 years used to custom kill through Normanville Abattoir. This abattoir closed 4 years ago and it is uncertain it will reopen. They currently use Strath Pastoral Ltd for custom kill and a wholesale butchery in Adelaide for processing smallgoods. However, they have concerns with scheduling of their stock through the Strathalbyn facility, i.e. there has been limited space/opportunity for their stock to be custom killed and the carcasses broken down. With high lamb prices and ongoing challenges with processing, SouthRock lamb has wound back their activities on their branded product. For example, their chorizo and joints, i.e. the more processed products, are not currently available, but whole carcasses are supplied to Southern Ocean Lodge.

The only custom kill facilities for poultry are Kapowie Poultry Service located at Allendale North near Kapunda (P. Dowsett, PIRSA, pers. comm.). The pheasants and partridges produced on KI for Southern Ocean Lodge are custom killed at the Kapowie facility. The lack of kill facilities within the Fleurieu is likely to be a factor discouraging the commercial production of poultry on KI. The contract production of pheasants and quail is the exception, in an unusual situation where the cost of production is not a significant factor in delivering a product.

Four abattoirs in the Fleurieu Peninsula have closed in the last 20 years (Aldinga Turkey Abattoir closed in 2014, Chapman Meatworks, Nairne (2002), KI Abattoir (1999) and Normanville Meatworks (2015)), reflecting a trend of rationalisation in meat processing. It is making it increasingly difficult for small-scale producers to get custom kill services as evidenced by the discussions above.

A key aspect to any branded product is traceability. SouthRock Lamb highlighted in their submission to the Discussion Paper their concerns about the risk of 'getting the wrong product back' through limited control of the supply chain when processing branded product off-island.

The Kangaroo Island Industry and Brand Alliance has established the trust marks "Authentic Kangaroo Island" and "Proudly Kangaroo Island". Businesses using the trust marks on their packaging or in marketing must certify that their products meet the brand criteria. For meat products that are processed off-island, this means having a proven chain of custody and handling, certified by the processor. This is an important component of establishing a 'place of origin' brand with strong integrity (Hartley 2016). However, Kangaroo Island Industry and Brand Alliance have indicated that achieving the chain of custody requirements for use of the trust mark by meat producers has proved difficult. Only one has achieved it in the four years since the Trustmark's inception - Kangaroo Island Free Range Pork through Skara Smallgoods - and that producer is no longer in operation (KI Industry and Brand Alliance submission). A wide variety of other KI food products are available with these trust marks (Hartley 2016), indicating the increasing value and recognition of the KI Brand. Kangaroo Island Industry and Brand Alliance see that meat processing on the Island will make it easy for producers to trace their product and encourage them to develop and maintain branded meat products to meet unmet demand from the hospitality sector for assured KI meat products.

3.3. Potential Demand for KI Meat Products on KI

A small survey of hospitality venues and supermarkets on KI was undertaken to gauge potential demand for KI meat products. Kangaroo Island Food and Wine Association provided e-mail contact details for 28 restaurant, cafe and catering business members who have sourced or who have shown interest in sourcing KI food products. In addition, two supermarkets, a butchery and other cafes and restaurants were also surveyed. Sixteen businesses responded to the survey. The full responses are provided in Appendix 2. Kangaroo Island Food and Wine Association represents about 60 food and beverage businesses on KI, equating to approximately 90 per cent of these businesses on KI (KI Food and Wine Association submission).

This is a limited survey and is likely to present the results of the hospitality and catering businesses most likely to be supportive of meat processing on the Island. However, the key points from the survey are summarised below.

All businesses surveyed were keen to source and use/stock KI meat products. They stated that KI is being marketed as a food destination and that KI branded meat products are an expected part of that offering.

Four businesses currently source KI meat products. Two businesses are confident of the traceability of their product and two businesses are not so confident. The two businesses that are confident of the traceability of their product either contract producers, have a close relationship with individual producers or grow their own product and have it custom processed. None of the four businesses is sourcing sufficient KI produced meat products to meet their demand.

Seven businesses indicated that they were prepared to pay a premium for a KI produced and processed product, three of which indicated a quantum for the premium. One indicated a 5 per cent premium for an equivalent quality product. One indicated that they have been paying 'double' the price for their KI meat products and this is an indication of their willingness to pay for a high quality, locally sourced product. The third business indicated that they pay the premium needed to get the quality product they seek and build their menu around that product, i.e. they are fairly price insensitive. Four businesses, a café, a bakery and two hotels, indicated that they were not willing to pay a premium above what they pay for an equivalent product from the mainland. Three businesses did not give a response regarding willingness to pay a premium.

Nine hospitality businesses gave their current demand for meat products. Their current weekly demand is approximately 230 kg beef, 205 kg chicken, 180 kg lamb and 155 kg of pork/bacon in the peak season and approximately 135 kg beef, 110 kg chicken, 115 kg lamb and 75 kg of pork/bacon in the non-peak season. Over a year, this demand translates to approximately 8.4 tonnes beef, 7.2 tonnes lamb, 6.8 tonnes chicken and 5.3 tonnes pork/bacon for these 9 businesses. There are about 65 food and beverage businesses on KI⁵.

A common message from respondents was a frustration at how difficult it was to source local meat products and that they were seeking product of a consistent quality that is supplied reliably all year round. They saw that an abattoir on the Island would simplify the supply chain and make it easier for producers to provide what they are after. Several respondents identified that there would be an additional benefit of an on-island kill facility of better quality and better tasting meat. Meat transported off KI to be processed is often affected by adrenalin from the stress of the sea crossing, which negatively affects the meat taste (KI Food and Wine Association, submission).

In their submission, the KI Food and Wine Association highlighted the issue of unmet demand from visitors for KI food products, of which meat was a significant contributor:

The TOMM (Tourism Optimisation Management Model) Visitor Exit Survey 2017/18 indicators for local produce highlight some obvious market gaps. ...

...The proportions of visitors very satisfied with the range (51%), quality (54%) and availability (47%) of local Kangaroo Island produce were consistent with the previous year. These results remain below the acceptable range of 70-100%. We are not satisfying customers when it comes to range, quality and availability. This has slowly increased over the past 8 years, but when a noticeable staple in the diet being protein is missing, this is [a]ffecting this satisfaction rate.

In addition to the tourism sector, there is demand from residents on the Island for meat products. Table 3-2 provides estimates of current and future meat consumption by the resident population. These estimates are based on Meat and Livestock Australia analysis of average per capita meat consumption in Australia (MLA

⁵ The KI Food and Wine Association represents 60 food and beverage businesses on KI, equating to approximately 90 per cent of these businesses on KI (KI Food and Wine Association, submission).

2018) and population projections for the KI resident population published by the Government of South Australia (DPTI 2016).

Table 3-2 Estimated Kangaroo Island resident population annual meat consumption (tonnes, carcass weight equivalent)

	Pork	Poultry	Beef	Sheepmeat
2017	110	223	125	40
2021	119	253	128	45

Sources: MLA (2018), DPTI (2016), BDO EconSearch analysis.

A proportion of this estimated meat demand could potentially be met by locally produced and processed premium meat products. For example, say the premium meat product component of this demand is 5 per cent of total demand, then the premium meat product demand on KI could be 5.5 tonnes pork, 11.0 tonnes poultry, 6.0 tonnes beef and 2.0 tonnes of lamb meat, which could potentially be met by locally produced and processed meat.

4. ANALYSIS OF OPTIONS

Four meat processing options were identified in the PIRSA Discussion Paper. Two options involved a establishing a small, fixed facility/abattoir on the island, the difference being in the ownership arrangements. These options have been analysed as one, without specific consideration of who owns the assets (Section 4.1). In light of consultation undertaken, the analysis of the other two options, mobile abattoir (Section 4.2) and using existing accredited facilities (Section 4.3), was less detailed and descriptive rather than quantitative.

4.1. Small, Fixed Facility Abattoir on KI

Two Options are described here.

Option 1 - Small, Privately Owned Abattoir

Establish a facility for primary meat processing (single or multi-species) or further processing and/or value add. This may include a facility for the processing of animals for meat for human consumption, and by-products for pet food or other uses. Consideration may also be given to include boning, further processing and/or value adding, including retail farm gate sales at the facility. The facility could supply meat and meat products for both wholesale and retail markets, including service processing for local producers. There is no legislation or food safety standards in South Australia that impede this option. It would require the processor to obtain Food Safety Accreditation (which includes compliance with Australian Standard 4696).

Option 2 - Small, Cooperatively Owned Small Abattoir

Establish a small shared facility for primary meat processing or further processing and/or value add. Similar to option one, but that it is a shared facility and could potentially be established under a 'co-operative' arrangement. Potential benefits of a co-operative style arrangement is that all local producers may have input to this facility, potentially increasing utilisation of the establishment.

4.1.1. Feedback received

Ten submissions were supportive of a small, permanently located processing facility on KI. There were no submissions that were not supportive of such a facility. None of the submissions indicated any particular preference for the ownership structure, e.g. independent operator, producer operator, producer cooperative. The appropriate ownership structure will become evident as part of detailed feasibility and marketing and branding studies, and for this reason these two options are considered together.

Mawarra Livestock Co. based on KI, who made a submission, indicated that they were interested in being a shareholder or supplying land, should the opportunity arise to develop such a facility.

From the submissions and consultation feedback received, the expected benefits of an abattoir on KI include:

- Value-adding, branding and marketing opportunities
- Local employment opportunities
- Reduced freight costs
- Improved meat quality

- The convenience of local meat supply to residents and tourists, i.e. improved access to meat processing services and easier traceability
- Potential business and margin benefits for non-stock producers on KI for forage crop production and feedlots utilising KI feed quality grains
- Fewer animals on the KI ferry. Animal transport can upset tourists and be quite messy.

One submission indicated a preference for a permanent facility on KI rather than a mobile facility, as a permanent facility would help establish a settled and permanent workforce (M. Hayward, submission). This submission further suggested that a permanent facility would allow operators to appropriately train employees and would provide registered training organisations, e.g. TAFE SA, an approved facility to utilise for training purposes.

A number of submissions identified that a small facility, taking premium animals only, rather than a large facility would be more feasible. A couple of submissions identified potential throughput. Both submissions suggested 100 lambs per day (A. Gilfillan and AGKI, submissions). The second submission also suggested an upper range of 200 lambs per day and 5 cattle per day (AGKI, submission). At this level of throughput, premium meat lambs and steers can be supplied all year round. AGKI indicated that the small facility would not be a 'game changer' for KI producers, however, it would be a boost for the local tourism industry, who want to promote local KI branded products.

In their submission, the AGKI indicated that there was interest from a number of their members in processing native wildlife. A couple of respondents to the demand survey indicated that tourists, particularly from Asian countries, are asking for kangaroo meat, and they see an opportunity to supply it with abundant numbers on the Island. One producer/caterer farms emu and would like to have a facility that could process emu.

The KI Council are supportive of local processing of meat on KI (A. Wilksch, pers. comm.) and are open to both a fixed facility and a mobile facility. They do see the fixed facility as more likely to generate sustained employment, which would have greater flow on benefits to the KI economy and community than a transient labour model expected with a mobile facility. They do not see any significant impediments to locating a facility either on farmland or in the designated industrial area near Kingscote. The former KI abattoir is located within the Kingscote Industrial area. The industrial area has the advantages of:

- Being centrally located
- Being located away from areas of tourist activity
- Accessible to main transport routes
- Providing access to mains power, water, sewerage and waste collection.

Areas zoned for primary production, which is the largest zone on the Island, can accommodate both permanent or mobile meat processing facilities and associated offices/shopfronts (A. Wilksch, pers. comm.). These facilities are required to be 500m from sensitive receptors, e.g. neighbouring homes. Disposal of solid waste from a small facility killing sheep and cattle on-site is possible under current EPA regulations. Disposal of abattoir waste from the slaughter of pigs on-site may be more problematic. If the site is not on mains water then the water will have to be sanitised, however, this can be achieved relatively simply and

effectively with ultraviolet light (A. Wilksch, pers. comm.). Liquid wastes would need to be treated via a septic tank system.

The KI Council identified a potential opportunity for the meat processing facility to supply organic waste to a proposed biogas electricity generation project on KI (A. Wilksch, pers. comm.).

Two submissions provided feedback on the location of the meat processing facility. The one submission recommended a central location and recognized that the former abattoir site is centrally located, but that the existing buildings and layout are not conducive to a small-scale process (A. Gilfillan, submission). The second submission saw the old abattoir site as well suited as all services are available and the site's structures and equipment will require less financial input to get the facility operational than building from new at an alternative site (D. Rourke, submission).

4.1.2. Financial analysis

Australian Micro Abattoirs was commissioned to provide capital cost estimates and a cash flow analysis of two scenarios:

Scenario 1

A small multi-species processing facility, which provides a custom kill and custom cut service with a throughput of 10,000 lambs, 500 pigs and 200 cattle per year⁶. A custom kill service will kill and dress an animal returning a chilled carcass to the customer. The custom cut service in this scenario assumes breaking down the carcasses to their primal cuts with a limited amount of full boning. It was assumed that 80 per cent of the carcasses would be custom cut. It is assumed the majority of carcasses are being supplied to hotel/restaurants, retail butchers and wholesalers on the Island and/or the Adelaide region. The capital costs to build the facility were estimated to be \$1.58 million.

Scenario 2

A larger multi-species processing facility, which provides a custom kill and custom cut service with a throughput of 25,000 lambs, 2,500 pigs and 1,000 cattle per year⁷. In this scenario it was assumed that 80 per cent of the carcasses would be custom cut (into primal cuts with a limited amount of full boning) and cryovac packed. The higher proportion of custom cutting reflects the much larger volume of throughput, which would require sales to off-island and interstate markets, which would not normally take carcasses. The capital costs to build the facility were estimated to be \$3.70 million.

For both scenarios, it was assumed that the facilities had access to mains water, power and sewerage.

These two scenarios broadly represent the potential range in throughput of a small to medium sized meat processing facility on KI. It should be noted that this is a high level, pre-feasibility analysis and the scenarios are indicative only. Likely throughput would need to be further defined within a feasibility study that included a marketing and branding study.

Details of the capital cost estimates and financial models of two scenarios are provided in Appendix 3.

⁶ Equates to a throughput of 238 lambs, 12 pigs and 5 cattle per week, assuming operation over 42 weeks of the year.

⁷ Equates to a throughput of 595 lambs, 60 pigs and 24 cattle per week, assuming operation over 42 weeks of the year.

A discounted cash flow analysis was undertaken by BDO EconSearch to analyse the return on investment. The results of the analysis are provided in Table 4-1. The detailed discounted cash flow analyses for the two scenarios are provided in Appendix 4.

Table 4-1 Results of the discounted cashflow analysis, Scenario 1 and Scenario 2

	Scenario 1	Scenario 2
Capital Costs (\$m)	1.58	3.70
Throughput (head/year)		
Lambs	10,000	25,000
Pigs	500	2,500
Cattle	200	1,000
NPV (\$m)	1.92	4.64
BCR	1.4	1.2
IRR	24%	27%
Payback period (years)	4	4

BDO EconSearch analysis.

The results of the discounted cash flow analysis have been presented in terms of four evaluation criteria: net present value (NPV), benefit-cost ratio (BCR), internal rate of return (IRR) and payback period. NPV is a measure of the aggregate, annual net benefits (i.e. benefits - costs) of an option over a 10-year period, discounted (i.e. expressed as a present value⁸ using a discount rate of 6 per cent). BCR is the ration of the present value of benefits to the present value of costs. IRR is the discount rate at which the NPV of a project is equal to zero. The payback period is the period over which it takes the facility profits to pay for the initial investment.

The results of the analysis indicate that for both scenarios (i.e. a small and a medium sized contract kill facility with a butchery) indicate that a good return on investment could be achieved, with positive NPVs, BCRs greater than 1 and IRRs greater than the discount rate applied. Furthermore, the payback period is quite reasonable at 4 years for both scenarios.

However, it should be noted that these results are indicative only and are based on two key assumptions. The first key assumption is that the throughput will be achieved, i.e. that there will be sufficient marketing and coordination for these levels of demand to be maintained. This may be a particular challenge for Scenario 2 with higher volumes, as it is likely that producers will need to combine forces to develop a successful, single KI brand that is marketed to interstate customers. The second key assumption is that the

⁸ The present value is the value now of a sum of money arising in the future. Money now is worth more than money in the future because it could be invested now to produce a greater sum in the future. The present value of money in the future is calculated by discounting it at a rate of interest equivalent to the rate at which it could be invested (Bannock et al. 1979). A discount rate of 6 per cent was used in this financial analysis.

throughput is constant throughout the year, with the facility operating for 42 weeks of the year. The demand could well be more seasonal.

Sensitivity analysis of the throughput assumptions was undertaken. In terms of throughput, the break-even point (i.e. where NPV is close to zero, BCR is 1.0 and IRR equals the discount rate (6 per cent)) for the smaller facility is reached at 71 per cent⁹ of modelled values and at 80 per cent¹⁰ of modelled values for the larger facility.

Furthermore, the cost to the producer seeking the services of custom kill and processing will also need to be price competitive with the alternative services available on the mainland. A comparative cost analysis was undertaken to investigate this and is presented in Table 4-2.

Table 4-2 Comparative cost for custom kill and cut services, lamb (\$/head)

	Adelaide Hills	Barossa region	This study
<i>Custom kill only</i>			
Animal Transport	10.00	10.00	5.40
Custom kill	18.00	15.00	17.50
Refrigerated transport	10.00	10.00	5.40
Total	38.00	35.00	28.30
<i>Custom kill and cut</i>			
Animal Transport	10.00	10.00	5.40
Custom kill	18.00	0.00	17.50
Custom cut	28.80	45.00	40.00
Refrigerated transport	10.00	10.00	5.40
Total	66.80	65.00	68.30

Sources: SouthRock Lamb (inter-island transport costs, Adelaide Hills example custom kill and cut costs), Australian Micro Abattoirs (Barossa region example and this study custom kill and cut costs).

Notes: On-island transport costs based on 75km trip at 68c/km vehicle costs and 1 hour of producer's time valued at \$30/hr. BDO EconSearch analysis.

The results of the comparative cost analysis indicate that the KI meat processing facility, based on the price assumptions used in this study, could be price competitive with mainland facilities.

4.1.3. SWOT analysis

Strengths

- An enabler for value-adding, branding and marketing opportunities.
- Local employment opportunities. Based on the scenarios modelled, the employment could range from five full-time equivalents (4 meat processors and 1 administrative person) to 15 fte (10 meat processors, 3 butchers and 2 administration/management persons).
- Reduced freight costs.

9 7,100 lambs, 355 pigs and 142 cattle.

10 20,000 lambs, 2,000 pigs and 800 cattle.

- Improved meat quality.
- The convenience of local meat supply to residents and tourists, i.e. improved access to meat processing services and easier traceability, which would also enable ‘paddock to plate’ initiatives.
- Fewer animals on the KI ferry. Animal transport can upset tourists and be quite messy.

Weaknesses

- Requires commitment from KI producers to use the facility to remain viable (i.e. is subject to a more limited pool of potential customers than on the mainland).
- Sensitive to the vagaries of the branded product market. Depends on owners of branded products developing and maintaining a successful brand.

Opportunities

- Potential business and margin benefits for non-stock producers on KI for forage crop production and feedlots utilising KI feed quality grains.
- Opportunity to build a strong, ‘place of origin’ brand, with established brand assurance infrastructure in place.
- Support the development of KI as a food destination.
- Potentially support re-establishing the poultry industry on KI (e.g. meat chicken, geese, etc.) if poultry kill room added.
- Potentially support establishing the native game meat industry on KI (e.g. kangaroo, farmed emu etc.) if game kill room added.
- Potential organic waste supplier to proposed biogas electricity generation project on KI (A. Wilksch, pers. comm.).

Threats

- Competition from the mainland meat processors.
- If demand is strongly seasonal, it will affect the operational efficiencies of the facility. This will also lead to more casualization of the workforce, with resultant impacts on families and the local community.

4.1.4. Discussion/conclusions

Feedback from the Government consultation on options for artisan meat processing on KI were supportive of establishing a small meat processing facility on KI.

A financial analysis of two scenarios, representing the likely lower and upper range of the throughput of such a facility was undertaken, with information on the investment costs and likely revenues and operating costs of such a facility provided by Australian Micro Abattoirs. The results of the analysis indicate that for both scenarios (i.e. a small and a medium sized contract kill facility with a butchery) a good return on investment could be achieved.

However, it should be noted that these results are indicative only and are based on two key assumptions. The first key assumption is that the throughput will be achieved, i.e. that there will be sufficient marketing

and coordination for these levels of demand to be maintained. This may be a particular challenge for Scenario 2 with higher volumes, as it is likely that producers will need to combine forces to develop a successful, single KI brand that is marketed to interstate customers. The second key assumption is that the throughput is constant throughout the year, with the facility operating for 42 weeks of the year¹¹. The demand could well be more seasonal.

Furthermore, the cost to the producer seeking the services of custom kill and processing will also need to be price competitive with the alternative services available on the mainland. A comparative cost analysis was undertaken to investigate this. The results of the comparative cost analysis indicate that the KI meat processing facility, based on the price assumptions used in this study, could be price competitive with mainland facilities.

A number of benefits were highlighted, including:

- An enabler for value-adding, branding and marketing opportunities.
- Local employment opportunities. Based on the scenarios modelled, the employment could range from 5 full-time equivalents (4 meat processors and 1 administrative person) to 15 fte (10 meat processors, 3 butchers and 2 administration/management persons).
- Improved meat quality.
- The convenience of local meat supply to residents and tourists, i.e. improved access to meat processing services and easier traceability, which would also enable ‘paddock to plate’ initiatives.
- Fewer animals on the KI ferry. Animal transport can upset tourists and be quite messy.

The KI Council are supportive of local processing of meat on KI. They do not see any significant impediments to locating a facility either on farmland or in the designated industrial area near Kingscote, however they do see that the industrial area has a number of advantages including being centrally located and having access to transport routes, mains power, water and sewerage and waste collection.

In conclusion, initial analysis indicates that a small, permanently located meat processing facility on KI may be viable, and has significant community support. There does not appear to be any significant technical or regulatory barriers to this option. For any company/group seeking to establish a meat processing facility on KI, it is strongly recommended that they undertake detailed market analysis and feasibility study to determine business viability.

4.2. Mobile Abattoir Operating on KI

Establish a mobile meat processing facility, which travels to livestock. There is no legislation or standards in South Australia that impede this option. However, there are additional issues to consider which make it more difficult to maintain a mobile facility. These include:

- adequate undercover livestock holding yards, primary chilling and cold storage facilities proportionate with throughput

¹¹ That is, the equivalent of 42 weeks operating 5 days/week. The abattoir could operate for more weeks of the year with some of those weeks open for less than 5 days per week.

- if producers wish to hang or age the meat for a period of time prior to processing, multiple cold storage facilities must be considered
- meeting local government zoning requirements
- ensuring adequate solid and liquid waste treatment and disposal
- ensuring adequate identification, traceability and integrity
- ensuring compliance with biosecurity requirements.

4.2.1. Feedback received

A number of submissions were broadly supportive of investigating options for primary processing of meat on KI, none indicated a particular preference for a mobile facility. One submission indicated a preference for a permanent facility on KI rather than a mobile facility, as a permanent facility would help establish a settled and permanent workforce, whereas - by implication - a mobile facility would not.

As described in Section 4.1.1., the KI Council are supportive of local processing of meat on KI (A. Wilksch, pers. comm.) and are open to both a fixed facility and a mobile facility. They do see the fixed facility as more likely to generate sustained employment, which would have greater flow on benefits to the KI economy and community than a transient labour model expected with a mobile facility. Disposal of solid waste from a small mobile facility is possible under current EPA regulations. If the site is not on mains water then the water will have to be sanitised, however, this can be achieved relatively simply and effectively with ultraviolet light (A. Wilksch, pers. comm.). Liquid wastes would need to be treated via a septic tank system.

There were concerns from a local retail butcher that a mobile abattoir could encourage producers who use the facility to have farm gate sales whilst not holding the correct meat handling accreditation. These types of transactions would be hard to detect and therefore hard to enforce compliance.

In the Options paper, the SA Government indicated that to date producers have found it is more cost effective to transport livestock to the processing facility, than it is to transport the processing facility to the livestock. This observation was supported by Australian Micro Abattoirs, an SA-based company who specialise in the development of small-scale abattoirs¹².

4.2.2. Discussion/conclusions

Consultation with industry and government experts would indicate that a mobile processing facility is unlikely to be a financially viable option for artisan meat processing on the Island. Furthermore, there was no particular support for a mobile processing unit.

4.3. Use Existing Accredited Facilities

Utilise existing accredited facilities - e.g. local butcher for further processing and/or value adding.

This is the business-as-usual option, which is described in Section 3.2.

¹² See also Jonas, T. 2017, Dead Local Meat: Building and Operating a Small-Scale Abattoir, <http://www.tammijonas.com/2017/11/03/dead-local-meat-building-and-operating-a-small-scale-abattoir/>

4.3.1. Feedback received

There were no submissions to the Options paper supporting this option.

There are producers in the Fleurieu Peninsula who are interested in developing small-scale abattoir facilities due to limited options for custom kill (M. Lally, pers. comm.), indicating that the custom kill part of the supply chain is the bottle neck.

SouthRock Lamb highlighted in their submission to the Discussion Paper their concerns about the risk of 'getting the wrong product back' through limited control of the supply chain when processing branded product off-island.

4.3.2. SWOT analysis

Strengths

Nil identified.

Weaknesses

- Still have to send animals off island for slaughter, which does not address the majority of the issues raised
- Difficulty of procuring traceable carcasses is a significant barrier to developing on-island value-add processing of KI meat products, evidenced by the lack of such products.

Opportunities

- Work strategically with Fleurieu producers to develop a 'whole of region' solution for artisan meat processing.

Threats

- Ongoing rationalisation of meat processing, removes feasible options for paddock to plate/branded products.
- Reduced diversity of livestock enterprises - loss of niche market producers.
- KI loses credibility as a food destination.

4.3.3. Discussion/conclusions

This is the business-as-usual option. It does not address the main bottleneck for producers seeking to market their own products, namely accessing custom kill facilities. It would still require these producers to send animals off the island, and therefore would not address the majority of the issues raised. The difficulty of procuring traceable carcasses is a significant barrier to developing on-island value-add processing. Ongoing rationalisation of meat processing on the mainland is removing feasible options for paddock to plate/branded products. This is resulting in a reduced diversity of livestock enterprises on KI, as evidenced by the closure of the main producer of branded free-range pork on the Island and the closure of the only commercial producer of geese meat recently. On the plus side, there is an opportunity to work strategically with Fleurieu producers to develop a 'whole of region' solution for artisan meat processing.

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Disclaimer

The assignment is a consulting engagement as outlined in the 'Framework for Assurance Engagements', issued by the Auditing and Assurances Standards Board, Section 17. Consulting engagements employ an assurance practitioner's technical skills, education, observations, experiences and knowledge of the consulting process. The consulting process is an analytical process that typically involves some combination of activities relating to: objective-setting, fact-finding, definition of problems or opportunities, evaluation of alternatives, development of recommendations including actions, communication of results, and sometimes implementation and follow-up.

The nature and scope of work has been determined by agreement between BDO and the Client. This consulting engagement does not meet the definition of an assurance engagement as defined in the 'Framework for Assurance Engagements', issued by the Auditing and Assurances Standards Board, Section 10.

Except as otherwise noted in this report, we have not performed any testing on the information provided to confirm its completeness and accuracy. Accordingly, we do not express such an audit opinion and readers of the report should draw their own conclusions from the results of the review, based on the scope, agreed-upon procedures carried out and findings.

APPENDIX 1 List of Persons and Organisations Consulted

Producers

Andrew Curtis, CEO, Livestock SA

Andrew Gilfillan, Owner, SouthRock Lamb

Rebecca Bott

Rick Morris, Chairperson, Agriculture Kangaroo Island (AGKI)

Processors

Stephen Tamplin, Tablelands Premier Meats (abattoir, processor and retail butcher)

Steven Northcott, Northcott Farmland Meats (retail butcher, Kingscote)

Restaurants, Hotels and Supermarkets

Bev Turner, Proprietor, Emu Ridge Eucalyptus

Bob, Proprietor, Corridor Restaurant, Penneshaw

Head Chef, Queenscliffe Hotel

Jack Ingram, Proprietor, Sunset Food and Wine

John Hird, Lodge Manager, Southern Ocean Lodge

John, Manager, Penneshaw IGA

Julie Hales, Cafés Team Leader, Sealink Kangaroo Island

Kasha Howard, Dudley Wines Cellar Door and Cafe

Kirste Mitchell, Store Manager, Drakes Foodland, Kingscote

Louis Lark, Proprietor, Cactus Cafe

Michael, Proprietor, Fire and Smoke KI

Proprietor, Fat Beagle Café, Penneshaw

Proprietor, Rabbit Warren Bakery, Kingscote

Roger Williams, Proprietor, Roger's Deli & Café

Russell Finney, General Manager, Kangaroo Island Wilderness Retreat

Sam Chan, Head Chef, Aurora Ozone Hotel

Sophie Sheridan, Proprietor, Emu Bay Lavender Farm

Steve, Head Chef, Penneshaw Hotel

Other

Aaron Wilksch, Manager Development and Environmental Services, Kangaroo Island Council

David Rourke, Territory Sales Manager, Elders, Kingscote



Lyn Dohle, PIRSA, Kingscote

Megan Harvie, CEO, KI Food and Wine Association

Michele Lally, CEO, Australian Micro Abattoirs

Paul Dowsett, Manager, Primary Industries Food Safety, PIRSA

Shauna Black, CEO, KI Industry and Brand Alliance

Tony Nolan, Chairman, KI Industry and Brand Alliance and Chairman, KI Food and Wine Association

APPENDIX 2 Results of Demand Survey

Type	Weekly demand		Price premium	Comments
	High season	Low season		
Bakery	70 kg (beef, chicken, lamb)	Not given	No, price competitive with mainland product	Tried to source local product in the past. Would be interested in using local product (plus with customers). Would need to have consistent supply and quality all year round.
Café	Mainly beef and chicken	Not given		Would buy local if available
Café	7kg stewing meat (beef, pork, lamb, chicken)	3.5kg stewing meat (beef, pork, lamb, chicken)	No, price competitive with mainland product	Currently not using KI sourced meat, but have in the past. Experienced issues with reliability/continuity. Would be keen to use KI meats if could be consistently supplied
Hotel/Restaurant	Not given		No, price competitive with mainland product	
Hotel/Restaurant	20 beef striploins (2-3kg/striploin), 10 pork bellies (5kg/pork belly)	8-10 beef striploins , 6 pork bellies	No, price competitive with mainland product	Keen to source local product
Hotel/Restaurant	40 kg beef scotch filet, 30kg lamb shanks/shoulders/racks, 40 whole chickens	15 kg beef scotch filet, 10kg lamb shanks/shoulders/racks, 15 whole chickens	Yes, upto 5 per cent	Keen to source local product as part of customers' 'destination experience' (currently using local fish and beverages) . Supplier must deliver consistent quality, freshness and supply reliably all year round.

Type	Weekly demand		Price premium	Comments
	High season	Low season		
Hotel/Restaurant	29 kg beef (sirloin, flank, mince, minute steaks, sausages, diced meat); 31 kg chicken (frames, wings, breasts, thigh); 10.5 kg lamb (shoulder, breast); 26.5 kg pork (belly, shoulder, sausages, bacon); 4 to 5 whole duck/goose	29 kg beef (sirloin, flank, mince, minute steaks, sausages, diced meat); 31 kg chicken (frames, wings, breasts, thigh); 10.5 kg lamb (shoulder, breast); 26.5 kg pork (belly, shoulder, sausages, bacon); 16 whole partridge, 16 whole pheasant	Yes, will pay the premium needed to get the product (see pheasant example)	Currently source whole lamb carcasses from SouthRock Lamb. Used to get whole pig carcasses from KI 4 years ago... was getting KI pork cuts from Feast! Fine Foods (until went into receivership). Gets 'a little bit of beef' locally, but challenging. Contracts John Kersley to custom grow pheasants and partridges (processed in the Barossa). Seeking lamb and pork as whole carcasses (has own processing facilities) and beef as primal cuts. 12,000 bed nights/yr (full catering) - full in peak season, 80% in off-peak. Also cater for staff. Use all parts of the animal.
Restaurant	2-3 boxes of beefsteak (25kg/box), 8kg pork fillets, 4-6kg pork belly, 3-4kg lamb backstrap, 9 kg lamb rump, 15kg chicken (whole)	Approx. 1/3 of peak season	Yes, within reason for a premium product	Very keen to source local and does source wherever it is possible (e.g. KI lamb from Holco, killed at TFI). First choice would be a connection to the producer. 2nd choice would be quaranteed raised on KI.

Type	Weekly demand		Price premium	Comments
	High season	Low season		
Restaurant		5kg stewing meat (beef/pork/chicken)	Yes	Current demand is mainly for smallgoods (e.g. ham, braesola, chorizo). Have tried to source KI pork, lamb and beef in the past, but hard to get a constant and reliable supply; and hard to arrange delivery. Currently use own beef, custom killed and processed on the mainland (process a beast once every 6 months). Keen to have a processing facility on KI.
Retail Butcher	2 lamb carcasses, ?1 carton beef, chicken (unknown quantity)			
Supermarket	Not given		Yes for premium product	Open to stocking local, premium product. Would need to be fully packaged ready for sale
Supermarket	Not given		Yes for premium product	Has briefly stocked in the past. All meat currently supplied by Drakes Meat Centre on the mainland. Has had 1 consignment of premium KI lamb in the past, which sold. Would be interested in stocking meat sourced directly from KI. It would need to be packaged, branded and preferably promoted by supplier. Customers ask daily for KI meat products.
Tour group catering	Not given			Use KI lamb but not readily available. Had previously investigated having a mobile abattoir for emu and wallaby processing but not cost effective. Keen to have local facility able to process native game.

Type	Weekly demand		Price premium	Comments
	High season	Low season		
Restaurant	Not given		Yes	Tried to source KI beef, but too difficult. Used to source KI lamb and pork through LakeFarm Meats, but company no longer operating. Use a number of KI food products other than meat. Keen to source local product. Considering processing own beef, lamb and pork from own farm for own restaurant and high end restaurants in Adelaide.
Café and Tour group catering	20 kg chicken, 30 kg bacon, 20kg lamb shanks		Yes for premium product	Currently sourcing KI lamb. Experienced issues with reliability/continuity. Would be keen to use KI meats if could be consistently supplied.
Café	30-40 kg bacon, 7kg lamb chorizo, 30 kg lamb shoulder, 30 kg lamb shank	15 kg bacon, 3kg lamb chorizo, 10 kg lamb shoulder, 10 kg lamb shank	Yes, was paying double for KI bacon and KI chorizo when available	Tried 'so hard' to source KI meat. Used to get KI bacon through Skara smallgoods (wasn't guaranteed that was 100% KI, but is excellent product) and lamb chorizo through SouthRock Lamb. Neither products are currently available (pork producer stopped production, South Rock brand temporarily not operating). Sources KI lamb through Holco, but sceptical about it being 100% KI lamb due to the seasonality of the product.



APPENDIX 3 Financial Models, Abattoir Scenarios

Appendix Table 3-1 Profit and Loss Summary, Scenario 1 (small abattoir)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue										
Contract kill	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000
Contract cut	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000
Skin sales	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000
Waste sales	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000
Total Revenue	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000
Cost of sales										
Wages - meat processing	278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373
Ancillary supplies	5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900
Utilities	54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831
Total cost of sales	339,104	339,104	339,104	339,104	339,104	339,104	339,104	339,104	339,104	339,104
Gross profit	569,896	569,896	569,896	569,896	569,896	569,896	569,896	569,896	569,896	569,896
Overheads										
Wages - marketing/administration	70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980
Administration and marketing	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900
Leasing costs	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400
Repairs and maintenance	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Initial start up costs	10,000									
Slaughter levies	6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137
Total overheads	142,417	132,417	132,417	132,417	132,417	132,417	132,417	132,417	132,417	132,417
EBITDA	427,479	437,479	437,479	437,479	437,479	437,479	437,479	437,479	437,479	437,479
Depreciation	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000	102,000
Interest	22,800	20,084	17,204	14,152	10,917	7,488	3,853	0	0	0
Profit Before Tax	302,679	315,395	318,275	321,327	324,562	327,991	331,626	335,479	335,479	335,479
Income tax	90,804	94,619	95,483	96,398	97,369	98,397	99,488	100,644	100,644	100,644
Profit After Tax	211,875	220,777	222,793	224,929	227,193	229,594	232,138	234,835	234,835	234,835

Australian Micro Abattoirs analysis.

Appendix Table 3-2 Profit and Loss Summary, Scenario 2 (larger abattoir)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue										
Contract kill	782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500
Contract cut	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000
Skin sales	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Waste sales	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Total Revenue	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500	2,932,500
Cost of sales										
Wages - meat processing	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105
Ancillary supplies	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000
Utilities	165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235
Total cost of sales	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340	1,786,340
Gross profit	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160	1,146,160
Overheads										
Wages - marketing/administration	159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705
Administration and marketing	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500
Leasing costs	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
Repairs and maintenance	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000
Initial start up costs	10,000									
Slaughter levies	26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685
Total overheads	360,890	350,890	350,890	350,890	350,890	350,890	350,890	350,890	350,890	350,890
EBITDA	785,270	795,270	795,270	795,270	795,270	795,270	795,270	795,270	795,270	795,270
Depreciation	273,333	273,333	273,333	273,333	273,333	273,333	273,333	273,333	273,333	273,333
Interest	150,000	132,130	113,187	93,108	71,825	49,264	25,349	0	0	0
Profit Before Tax	361,937	389,807	408,750	428,829	450,112	472,673	496,588	521,937	521,937	521,937
Income tax	108,581	116,942	122,625	128,649	135,034	141,802	148,976	156,581	156,581	156,581
Profit After Tax	253,356	272,865	286,125	300,180	315,078	330,871	347,611	365,356	365,356	365,356

Australian Micro Abattoirs analysis.



APPENDIX 4 Detailed Discounted Cash flow Analysis, Abattoir Scenarios

Appendix Table 4-1 Discounted Cash Flow Analysis, Scenario 1

	PV	0	1	2	3	4	5	6	7	8	9	10
Base Case (without abattoir)												
Benefits (\$)												
Total Benefits (\$)	0											
Costs (\$)												
Total Costs (\$)	0											
Option 1 (with abattoir)												
Benefits (\$)												
Residual value of project capital	481,132											510,000
Contract kill revenue	1,795,861	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000	244,000
Contract cut revenue	3,415,080	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000	464,000
Skin sales	1,030,412	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000	140,000
Waste sales	448,965	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000
Total Benefits (\$)	6,975,100	0	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	1,419,000
Costs (\$)												
Capital costs	1,580,000	1,580,000										
Wages - meat processing	2,048,850		278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373	278,373
Ancillary supplies	43,425		5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900	5,900
Utilities	403,561		54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831	54,831
Wages - marketing/administration	522,419		70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980	70,980
Administration and marketing	124,385		16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900	16,900
Leasing costs	105,985		14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400
Repairs and maintenance	176,642		24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Initial start up costs	9,434		10,000									
Slaughter levies	45,169		6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137	6,137
Total Costs (\$)	5,059,870	1,580,000	481,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521
Incremental Benefits (\$)	6,975,100	0	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	909,000	1,419,000
Incremental Costs (\$)	5,059,870	1,580,000	481,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521	471,521
Net Benefits (NPV) (\$)	1,915,231	-1,580,000	427,479	437,479	437,479	437,479	437,479	437,479	437,479	437,479	437,479	947,479
Benefit Cost Ratio (BCR)	1.4											
Internal Rate of Return (IRR)	26%											



BDO EconSearch analysis.

Appendix Table 4-2 Discounted Cash Flow Analysis, Scenario 2

	PV	0	1	2	3	4	5	6	7	8	9	10
Base Case (without abattoir)												
Benefits (\$)												
Total Benefits (\$)	0											
Costs (\$)												
Total Costs (\$)	0											
Option 1 (with abattoir)												
Benefits (\$)												
Residual value of project capital	864,780											916,667
Contract kill revenue	5,759,268		782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500	782,500
Contract cut revenue	11,187,332		1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000	1,520,000
Skin sales	3,312,039		450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Waste sales	3,312,039		450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000	450,000
Total Benefits (\$)	24,082,541	0	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	4,119,167
Costs (\$)												
Capital costs	3,700,000	3,700,000										
Wages - meat processing	11,806,352		1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105	1,604,105
Ancillary supplies	125,121		17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000	17,000
Utilities	1,216,144		165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235	165,235
Wages - marketing/administration	1,175,443		159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705	159,705
Administration and marketing	239,203		32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500
Leasing costs	353,284		48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
Repairs and maintenance	618,247		84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000
Initial start up costs	9,434		10,000									
Slaughter levies	196,404		26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685	26,685
Total Costs (\$)	19,439,633	3,700,000	2,147,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230
Incremental Benefits (\$)	24,082,541	0	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	3,202,500	4,119,167
Incremental Costs (\$)	19,439,633	3,700,000	2,147,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230	2,137,230
Net Benefits (NPV) (\$)	4,642,908	-3,700,000	1,055,270	1,065,270	1,065,270	1,065,270	1,065,270	1,065,270	1,065,270	1,065,270	1,065,270	1,981,937
Benefit Cost Ratio (BCR)	1.2											
Internal Rate of Return (IRR)	27%											

BDO EconSearch analysis.